



Winter 2002 ♫ Volume 3 ♫ Number 3

Partners II: A RSIP Status Report

reported by Lee Kyle, George Serafino, William Teng, and Long Chiu

The Remote Sensing Information Partners (RSIP) project held its first workshop on January 8, 2002, at the Goddard Earth Science (GES) Data and Information Services Center (DISC). The purpose of the workshop was to review the basic concepts and objectives of the RSIP with emphasis on the technical aspects of how the partnership actually operates. The object of the RSIP project is to provide participating institutions with inexpensive (minimum effort) access to the global spanning NASA Earth science satellite data holdings for use in their own regional service and research programs. The DISC supplies designated regional subsets produced from NASA data holdings in agreed upon format to its partners who, in turn, generally produce specialized regional products for their own local user communities. These value added local products are of potential interest to research scientists, educators, agriculturists, land management planners, and watershed and ecosystem monitors, to name a few. The workshop was attended by nine representatives from three RSIP partners; the University of New Mexico (UNM), Rutgers University (RU), and George Mason University (GMU). The RSIP project benefits the NASA Earth Science program and the other partners by the wider

dissemination and use of the important Earth Observing System (EOS) satellite data sets, improving the understanding of regional environments and how they are changing. (See photo on page 2.)

Presentations by DAAC staff included

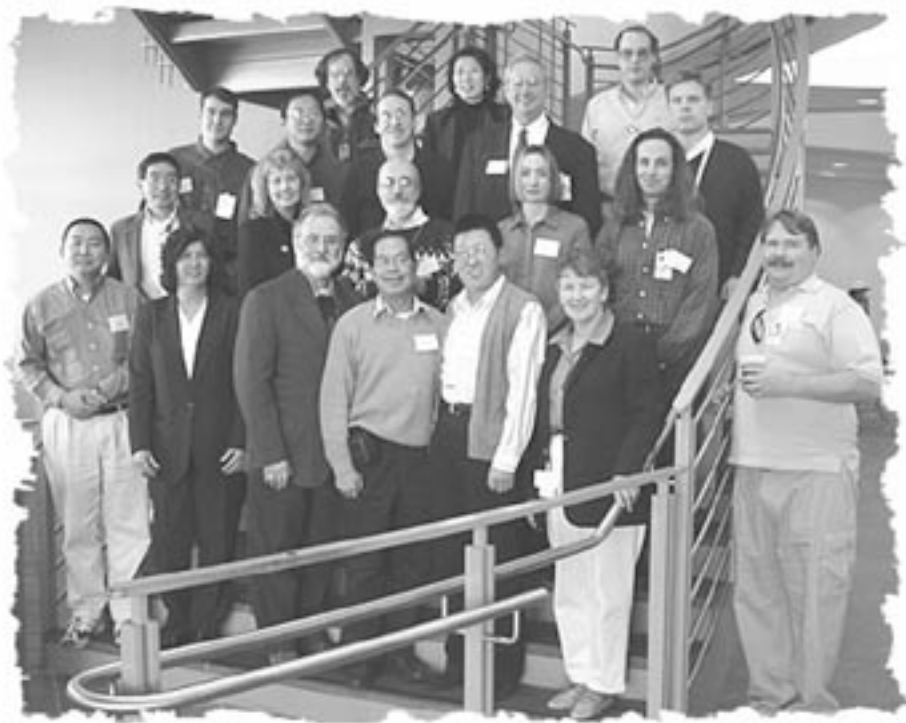
- 1: Overview of GES DISC DAAC Operations
- 2: Tropical Rainfall Measuring Mission (TRMM) Data Sets and Tools
- 3: Moderate-Resolution Imaging Spectroradiometer (MODIS) Products and Tools
- 4: Sea-Viewing Wide Field-of-View Sensor (SeaWiFS) Data
- 5: RSIP Interoperability
- 6: GES DAAC Administrative Support.

The presentations were followed by open discussion. The three student members of UNM's Earth Data Analysis Center group spent the following day (January 9) at the DAAC with several staff members who covered User Services at the GES DAAC, the TRMM value-added production and statistics collection, and some of the facilities and software tools available to GES DAAC customers.

The RSIP Structure

A diagram of the RSIP concept and structure is shown in Figure 1. Each partner agrees with

continued on page 2



Attendees at the 1st RSIP workshop from the top left (affiliations other than GES DISC are noted -- EDAC is the Earth Data Analysis Center at UNM):

Top row; John Bonk, Hualan Rui, George Serafino

Row 2; Matthew Ward (EDAC), John Qu, Jim Acker, Stan Morain (EDAC), Nathan Pollack

Row 3; Bill Teng, Amelia Budge (EDAC), Menas Kafatos (GMU), Emily Clary (EDAC), Jim Trimble (RU)

Bottom row; Zhong Liu, Frances Bergmann, Hank Wolf (GMU), Long Chiu, Ruixin Yang (GMU), Pat Hrubciak, Jon Swearingen (EDAC, drink in hand).

the Goddard DISC as to the particular data sets, format, and regional coverage desired. The DISC draws the desired data from the archive or cache, does the required subsetting, reprojection, and reformatting, and ships to the partners. Each partner has its own circle of regional customers they furnish with a number of products that include the DISC supplied data or value-added products generated using the DISC supplied data.

The Jet Propulsion Laboratory (JPL) DAAC represents the simplest type of partner. In this case, the MODIS Sea Surface Temperature (SST) products archived at the DISC are simply transferred in full to JPL in their original format via an open ended subscription. JPL acts as a "West Coast Distribution Node" for MODIS SST products, thus alleviating bottlenecks that may result from high demands that may periodically be placed on a single distribution point.

The three partners that attended the RSIP Workshop (Rutgers, UNM, GMU) have all requested that they be furnished with regional data sets in a Geographical Information System format. The NASA Earth Science DAACs store most of their data sets in Hierarchical Data Format (HDF) or HDF-EOS (Earth Observing System), which is a variation of HDF specifically tailored for EOS data sets. Since standard GIS analysis packages are not designed to handle HDF or HDF-EOS formatted data files, the GES DISC makes regional subsets and reformats and performs other required operations on the data sent to these partners. Although the majority of the customized products delivered to the RSIP nodes are derived from parent products retrieved from the GSFC DAAC archive, the DISC can act in the capacity of a facilitator to obtain and reformat products from other NASA archive centers. Two previous articles [1, 2] in this publication have described the GES DISC's partnership programs and how the DISC is making available some of its data holdings in GIS format both to its RSIP partners and to the general public. Figure 1 and some of the more recent RSIP developments reported here are taken from a recent review article [3].

The UNM Partner

The Earth Data Analysis Center (EDAC) at the University of New Mexico is an operational RSIP with a strong focus on regional hydrological studies. It is a New Mexico State extension agency that provides

An expanded and updated version of *The Global Scanner* is available on our Web site at
http://daac.gsfc.nasa.gov/DAAC_DOCS/Newsletter

News of noteworthy events that occur in the interim between publication of this issue and the next will be posted there along with goodies we feel may be helpful to our users.
Be sure to visit the site from time to time.

data and information services to local farmers and ranchers. The GES DISC routinely sends its precipitation products from the TRMM satellite to help EDAC monitor environmentally sensitive regions like the Sevilletta National Wildlife Refuge. The DISC developed an automated system for this effort that involves generating an intermediate “gridded orbital” product in a simple binary format, spatially subset to encompass the state of New Mexico, and mapped to a geographic grid with a 0.1° latitude-longitude resolution. This intermediate product is then input to ARC/INFO running in batch mode to create a final customized product in interchange and shapefile formats. These products are then transferred from the DISC to EDAC, which in turn imports the data into a local GIS package (e.g., ERDAS Imagine), in the process overlaying the rainfall map with shaded relief and county boundary maps of New Mexico. EDAC is currently evaluating the use of MODIS vegetation data and SeaWiFS aerosol data for future applications-related studies.

The Rutgers Partner

The Center for Remote Sensing and Spatial Analysis (CRSSA) at Rutgers University is developing a multiscale data base of MODIS land, ocean, and atmospheric imagery for the State of New Jersey and the surrounding region for a potentially wide range of applications. The data base will include 1-kilometer resolution calibrated radiance data for ocean bands; 250-, 500-, and 1000-meter resolution land channel surface reflectances, Normalized Difference Vegetation Index (NDVI), and Enhanced Vegetation Index (EVI) for land and vegetation monitoring; 5-kilometer

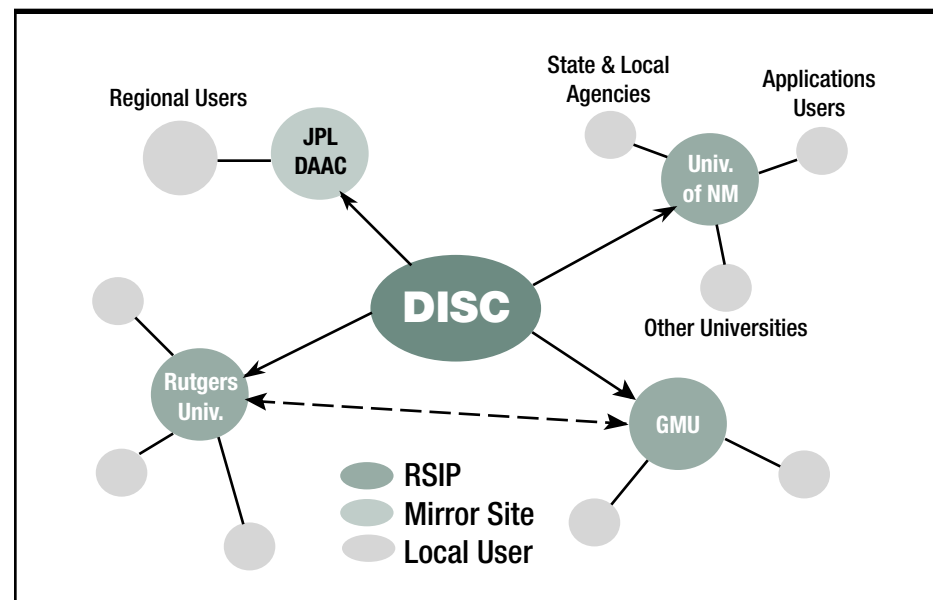


Fig 1. RSIP concept and structure. JPL is a mirror site. The DISC does special data preparation on the products shipped to the other partners.

atmospheric parameters (such as aerosol overburden, cloud cover, and total precipitable water); and 1-kilometer resolution snow cover. These data products will be used to provide high temporal resolution images of vegetation and land surface climatological dynamics of the Mid-Atlantic region. Because New Jersey marine scientists are interested in near real-time MODIS data, the DISC may process the GSFC MODIS Direct Broadcast data in the future and provide these as experimental ocean products to CRSSA.

http://daac.gsfc.nasa.gov/DAAC_DOCS/direct_broadcast/db.html

The DISC data preparation for Rutgers University is somewhat more complicated than that for the University of New Mexico. The MODIS land products have to be retrieved from the EROS Data Center (EDC) and the snow products from the National Snow and Ice Data Center (NSIDC). The land products come in the Integerized Sinusoidal map projection, which the

DISC reprojects to Rutgers specifications. The DISC is in the process of setting up an automatic system to generate and deliver customized MODIS land products for the Rutgers RSIP. This automated system is complete except for the implementation of a spatial subscription service from the EDC DAAC, which should be available in 2002.

The GMU Partner

The RSIP based at George Mason University (GMU) is in the process of defining the DISC data that it wants. GMU is a major participant in the Virginia Access (VAccess) program, a comprehensive effort involving a federation of eight educational institutions focusing on the development of regional prototype applications using remote sensing data provided by government agencies and other organizations. A steering committee composed of representatives from state, local, and federal agencies will provide guidance on data requirements and critical system function-

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ality from an end user perspective. There is also a strong education, training, and outreach component in VAccess. Possible candidate data sets that the DISC can provide or assist in providing include TRMM, SeaWiFS, MODIS, and GOES (Geostationary Operational Environmental Satellite). Leveraging off the methodology used for CRSSA, sample MODIS products, including 250-M vegetation indexes and surface reflectances, have already been generated for regions of Virginia for evaluation purposes.

Potential RSIP Partners

Although not shown in Figure 1, Pennsylvania State University (PSU), in collaboration with state health agencies and the Environment and Health (E & H) Program at NASA-Goddard Space Flight Center, is the latest candidate for possible inclusion as an RSIP node. Recent discussions have centered on the need to monitor and predict outbreaks of infectious, vector borne diseases, such as West Nile virus, using environmental data as one of the primary predictors (see <http://healthyplanet.gsfc.nasa.gov/project6.html>). Data requirements are still being defined by the participants, but it is expected that the MODIS land products will play an important role in this effort. More specifically, MODIS NDVI, EVI, Surface Reflectances (SR), and Land Surface Temperature (LST) covering the state of Pennsylvania are routinely being preprocessed by the DISC using the same system deployed for CRSSA and VAccess. To facilitate the evaluation of MODIS data as a tool for monitoring infectious disease outbreaks, a Web site has been established by the E & H program, allowing the participating Pennsylvania state agencies to view or retrieve the latest GeoTIFF images generated by the DISC for these parameters.

Further Down the Line

Future work will include continuing to automate the processing and delivery of data

products to the RSIPs and continuing to assist the RSIPs and potential RSIPs to obtain NASA EOS data for evaluation in their environmental, health, and education programs. An important effort is underway to make the distributed data by the RSIPs and at the DISC mutually visible and accessible over the Internet to encourage exchange and interuse of environmental data and information. The dotted line in Figure 1 represents this effort for RSIP interoperability. On March 22 the DISC opened its WebGIS site,

<http://daac.gsfc.nasa.gov/WEBGIS/>

which represents an important step forward in this effort. As usual, the DISC will collect metrics to assess the effectiveness of its RSIP project in increasing the usefulness of EOS data sets.

References

Earlier issues of the *Global Scanner*, newsletter of the GES DISC, are available on line at

http://daac.gsfc.nasa.gov/DAAC_DOCS/Newsletter/

Scroll down to Previous Issues and click the desired issue.

- [1] "Partners" by Kyle et al., in the *Global Scanner*, Spring 2000 issue, p. 4.
- [2] "Opening GES DISC Data to GIS Users" by Kyle et al., in the *Global Scanner*, Winter-Spring 2001 issue, p. 1.
- [3] "Facilitating the Access and Utilization of Satellite Remote Sensing Data Via the Remote Sensing Information Partner (RSIP) Project at NASA/GSFC," by George Serafino, William Teng, Long Chiu, John Qu, Nathan Pollack, Zhong Liu (all of the GES DISC), and Nancy Maynard (Associate Director, Environment & Health, NASA, GSFC), presented at the 2002 Science Data Processing Workshop, February 26–28, 2002, Greenbelt, MD.

New Data Products General News People in the News



as reported by
George Serafino, Bill Teng, Chris Lynnes, and others

NEW DATA PRODUCTS & SERVICES

Detailed information about the archived data holdings at the GES DISC can be found at

<http://daac.gsfc.nasa.gov>

In this section we just emphasize important new happenings concerning our data holdings. These are arranged by data categories.

NEW TOOLS FOR GES DAAC DATA USERS

WebGIS

The DAAC released its first publicly available WebGIS on March 22 and showcased it at the TUGIS 2002 Conference, March 25–26, at Towson State University.

<http://daac.gsfc.nasa.gov/WEBGIS/>

The WebGIS is an Open Geographical Information System (GIS) Consortium (OGC)-compliant Web viewer that provides online access to tools and information designed to allow end users to search for, visualize, and (in the future) retrieve selected GES DAAC data (currently TRMM and AVHRR; others will be added in the future) and those from other sources, converted on the fly to OGC-compliant formats. To facilitate online analysis and visualization, ancillary data are maintained by the DAAC for use in the Web viewer. The viewer currently implements OGC's GetMap (display image) specification, see

<http://www.opengis.org/>

The benefits to users are

- the open standards and formats are not specific to any given software package
- data conversion is transparent
- data from distributed sources and various formats can be easily combined and analyzed in a seamless environment.

This OGC client effort at the GES DISC began within the Hydrology Data Support Team (HDST) partly for historical reasons (the DISC's overall GIS effort began within the HDST), but the Ocean Color Data Support Team (OCDST) has also participated. This OGC client is definitely meant to be a DAAC-wide effort and tool. It should become so over time.

Universal Data Reduction Server (UDRS)

A UDRS is now available at the GES DAAC at

http://daac.gsfc.nasa.gov/CAMPAIGN_DOCS/UDRS/index.shtml

The UDRS consists of a set of data reduction servers that make use of popular data access protocols to facilitate distribution of large EOSDIS online data holdings over the Internet, for discipline, interdisciplinary, and applications-related studies. This is an alpha release that will evolve with time as server capabilities are enhanced to include additional data sets. Because the Distributed Oceanographic Data System (DODS) is the underlying engine for all UDRS components, multiple data formats are handled and subsetting functions are performed on the server side prior to delivery to the user.

There are three components to this system

- the basic DODS server
- a Web Mapping Testbed gateway (WMT-DODS) that allows communications between the DODS servers and OpenGIS-compliant clients
- the Live Access Server (LAS) based on the system developed by NOAA but which also uses DODS as the interface to the actual data holdings.

All of these components support server side subsetting of data. In the future we expect to add in an additional component (Gridded Analysis and Display System, or GrADS-DODS) to provide server side analysis capabilities in addition to the usual subsetting and visualization features.

The UDRS may also be reached from the DAAC Home Page by clicking the button at the top marked "DODS Services." Several Level 3 (gridded) MODIS data sets are available with plans to expand to many other products in the future.

Coming Soon

A 14 TB "data pool" for online access, retrieval, and viewing of recent MODIS and some other Earth Observing System EOS data at the GES DAAC. Users will have access to these data through several means, including direct anonymous FTP downloads, a Web interface that will mimic the standard DAAC local user interface (WHOM), and the UDRS described above. This data pool is planned to grow to over 50 TB in the coming months.

GES DAAC PRINCIPAL DATA SETS

MODIS DATA SUPPORT

Radiance data and auxiliary information such as geolocation and cloud mask, atmospheric profiles, and higher level ocean color data.

The entire collection (version 3) of MODIS 11 micron SST has been designated validated. It spans the temporal period November 2000 to present.

The entire collection (version 3) of MODIS Level 1B calibrated radiance data has been designated validated, spanning the temporal period November 2000 to present.

A new MODIS L1B subsampled product with effective 5 kilometer resolution is now being created operationally as part of the DAAC production system. Two output products are generated for every MODIS 1 kilometer L1B input file, one output in HDF-EOS format and the other as a tarred set of individual binary files (each binary representing a single array in the associated HDF-EOS output). The output was created by taking every 5th pixel of every 5th scanline, resulting in an average file size of about 10 MB compared with 250 MB for the full resolution input file.

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See http://daac.gsfc.nasa.gov/CAMPAIGN_DOCS/MODIS/new.shtml for further details on the latest DAAC developments in MODIS data support.

OCEAN COLOR

Remote sensing ocean color data used to investigate ocean productivity, marine optical properties, and the interaction of winds and currents with ocean biology.

The latest *Science Focus!* articles have been released on the Web

- O-Three, Can You See
- A Bloom by Any Other Name... Might Never Be a Bloom at All.

The *Science Focus!* URL is

http://daac.gsfc.nasa.gov/CAMPAIGN_DOCS/OCDST/science_focus.html

Researchers may also find useful products in our other important data set collections.

ATMOSPHERIC CHEMISTRY

Ozone and other trace gas compositions, dynamics, and energy interactions of the upper atmosphere.

ATMOSPHERIC DYNAMICS

3-D dynamic and thermodynamic state of the Earth-atmosphere system, from satellite measurements and assimilation systems.

FIELD EXPERIMENTS

Aircraft and ground based measurements of meteorological variables designed to improve science algorithms and validate satellite-derived data products.

HYDROLOGY

Global precipitation, its variability, and associated latent heating, important for studying the global hydrological cycle, climate modeling, and applications.

INTERDISCIPLINARY

Global land, ocean, and atmospheric parameters mapped to uniform spatial and temporal scales for basic research and applications studies.

LAND BIOSPHERE

Long time-series vegetation and thermal infrared brightness temperature data sets for global change research.

For more details about the GES DISC data holdings and to order data see our Home Page or contact us by eMail, phone, or fax.

<http://daac.gsfc.nasa.gov/>

For MODIS User Services
eMail: daac_usg@gsfcsrvr4.gsfcmo.ecs.nasa.gov

phone: 301-614-5473

fax: 301-614-5304

For other products' User Services

eMail: daacuso@daac.gsfc.nasa.gov

phone: 301-614-5224 or 1-877-422-1222

fax: 301-614-5304

GENERAL NEWS

Aqua Launch Successful!



Picture courtesy of Dr. Chris Barnet, JCET, Code 910.4.

The Aqua spacecraft lifted off from the Western Test Range of Vandenberg Air Force Base, CA, aboard a Delta II rocket at 2:55 a.m. PDT, May 4, 2002. Spacecraft separation occurred at 3:54 a.m. PDT, inserting Aqua into a 438-mile (705-kilometer) orbit. After the launch the Aqua Project Manager, Phil Sabelhaus, at NASA's Goddard Space Flight Center in Greenbelt, MD, declared, "The Aqua project has truly been a team effort and we are very excited this morning." Aqua was constructed at the TRW Space Park manufacturing facility in California and shipped to Vandenberg in late February for final testing and integration with its launch rocket. The latest in the NASA Earth Observing System (EOS) satellite series, Aqua will collect measurements of rainfall, snow, sea ice, temperature, humidity, vegetation, soil moisture, and clouds as part of NASA's long-term, coordinated research study of changes in the global environment. The GES DAAC will archive Aqua MODIS atmosphere and ocean data products in the same fashion as

it does the Terra MODIS products. It will also handle data from the Aqua atmospheric sounding package that consists of three instruments: the Atmospheric Infrared Sounder (AIRS), the Microwave Sounding Unit (AMSU), and the Humidity Sounder for Brazil (HSB). Data from the Aqua MODIS and the atmospheric sounding package will be released to the public on a schedule determined by the respective science teams as they validate the numerous proposed products from these instruments. The GES DAAC will post on its Web sites updated information concerning the release of the various products. For additional information about how the GES DAAC will handle Aqua data, see "Aqua With AIRS Is Coming" in the *Global Scanner*, Summer 2000 issue, p. 4. Past issues of the *Global Scanner* can be accessed from

http://daac.gsfc.nasa.gov/DAAC_DOCS/Newsletter/index.html

Check the following Web sites for up-to-date information about

- the Aqua spacecraft, <http://aqua.nasa.gov/>
- the Aqua atmospheric sounding data, http://daac.gsfc.nasa.gov/CAMPAIGN_DOCS/atmospheric_dynamics/ad_data/airs.html
- the Aqua MODIS data, <http://daac.gsfc.nasa.gov/MODIS/Aqua/>

Meetings

A GES DAAC User Working Group (UWG) meeting was held January 9–10, 2002, at the Goddard Space Flight Center. The UWG consists of a panel of data users and Steven Kempler, the head of the GES DAAC, who meet from time to time to consider how well the GES DAAC is accomplishing its task of processing, archiving, and distributing its assigned portion of NASA Earth Science data. It is chaired by Dr. Stan Morain of the University of New Mexico. The panel advises on needed improvements and on the best way the GES DAAC can prepare for future tasks and challenges. Steve Kempler and his staff made presentations on the present status and future plans and participated in the panel discussions that followed. A report on this meeting is scheduled to appear soon in the *Global Scanner*. A previous report on past meetings of the UWG can be found in the article, "The GES DAAC User Working Group," *Global Scanner*, Summer 2001 issue, p. 5. That issue can be accessed from

http://daac.gsfc.nasa.gov/DAAC_DOCS/Newsletter/index.html

A Remote Sensing Information Partner (RSIP) Workshop was held 1/8–9/02, at Goddard Space Flight Center. It was organized and conducted by George Serafino, leader of the Customer Service Group, and some of his staff. See the article, “Partners II: The First RSIP Workshop,” in this issue.

Papers & Presentations

PUBLISHED—Acker, J., S. Shen, G. Leptoukh, G. Serafino, G. Feldman, and C. McClain. 2002. SeaWiFS ocean color data archive and distribution system: assessment of system performance. In *IEEE Transactions on Geoscience and Remote Sensing*, 40:90–103.

Nathan Pollack, William Teng, George Serafino, and Long Chiu authored “GIS for Expanding the Application Potential of TRMM Data,” presented at the Eighteenth International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 1/13–17/02, Orlando, FL.

J. Acker, D. Nadeau, and A. Vassilkov authored a poster “Use of SeaWiFS Data to Quantify Carbonate Mass for a Hurricane-Forced Neritic Sediment Transport Event” for the AGU Oceans 2002 meeting in Honolulu, 2/11–15. Jim Acker presented the poster, which was constructed and printed with the assistance of Edee Ocampo.

Two papers were presented at the 2002 Science Data Processing Workshop, 2/26–28, 2002, Greenbelt, MD.

- Serafino, G., W. Teng, L. Chiu, J. Qu, N. Pollack, Z. Liu (all of the GES DISC) and N. Maynard (Associate Director, Environment & Health, NASA, GSFC): “Facilitating the Access and Utilization of Satellite Remote Sensing Data Via the Remote Sensing Information Partner (RSIP) Project at NASA/GSFC.”

- Serafino, G., C. Lynnes, L. Pham, P. Sweatman, N. Pollack, W. Teng (all of the GES DAAC) and D. Holloway (of the University of Rhode Island): “Opening Up EOS Data Holdings to the Wider User Community: The Universal Data Reduction Server at the Goddard Distributed Active Archive Center.”

Bill Teng and Nathan Pollack attended the Towson University Geographical Information System (TUGIS) Conference, 3/25–26/02. The new GES DAAC publicly available Internet Geographical Information System was showcased at the meeting. See <http://daac.gsfc.nasa.gov/WEBGIS/>

GES DISC personnel helped coauthor a paper presented at the Mass Storage Conference, Greenbelt, MD 4/15–18/02.

- Ramapriyan, H.K., S. Kempler, C. Lynnes, G. McConaughy, K. McDonald, R. Kiang (all of NASA GSFC), S. Calvo, L. Roelofs, B. Harberts (all of GST, Inc.), and D. Sun (George Mason University): “Conceptual Study of Intelligent Data Archives of the Future.”

PEOPLE IN THE NEWS

Personality Sketch: Randy Barth, GES V0 DAAC¹ Systems & Software Engineering Lead

Randy has been associated with Goddard Space Flight Center for 33 years. He first came to Goddard as a co-op student in 1966 while working on his undergraduate degree at the University of South Florida. He joined full-time in 1970 as a Systems Programmer for the supercomputer of the day, the IBM 360/91. Randy recalls: “There were only twelve of them built, and I was here when they spent a million dollars to get the second megabyte of memory added.” He continued working with that group as a civil servant until 1980 when he got his Ph. D. from the University of Maryland in Computer Science and left to work on other projects.

Three years later he returned to the Goddard campus as a contractor. By the late 80s Randy was working on the Phase B and C study that was the precursor to the ultimate ECS contract. He was the first to suggest a client-server approach to data retrieval when Web solutions were still novel. In 1993 he joined the Version 0 IMS team working on the X-Windows system that would evolve into EDG, the EOS Data Gateway. He was instrumental in developing the V0 protocol, and designed simulators to allow testing of clients and servers that could handle both correct and erroneous uses of the protocol.

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In 1998 Randy joined the V0 DAAC as head of the Systems and Software Engineering Section. In this capacity he has been working with the systems administrators, data base administrators, and developers of the V0 and V1 DAAC software systems. He has provided a focus using collaborative tools that allow easy communication and tracking with a minimum of overhead. Drawing on growing Web and networking tools, he has provided easy tracking and status for the many jobs the section has going at any time.

Recently the team has been experimenting with the Extreme Programming techniques. This is one of a set of “agile” techniques that allows software to be developed in rapidly changing environments with less overhead and more responsiveness than most software engineering techniques. Experience so far has been promising—a recent rewrite of the WHOM Order Engine software developed rapidly, appears solid, and has engendered a lot of enthusiasm by the team. Randy has been involved in software engineering techniques since creating a set of structured programming macros for assembly language in the mid 1970s.

On the social side, Randy has been involved with Goddard’s Music and Drama

Club (MAD) since 1975. He has appeared on stage in roles such as Henry Higgins in *My Fair Lady*, the Emcee in *Cabaret*, Harold Hill in *The Music Man*, and Tommy Albright in last fall’s *Brigadoon*. This fall he will direct his seventh show for MAD, the musical *Fiorello!* He first gained management experience by being president of the club (“and if you can manage actors, you can manage anyone!”). He has also been the long-term Web master for the club (<http://gewa.gsfc.nasa.gov/~mad>).

1 The DISC comprises three separate data systems, each dedicated to supporting data products from different missions: heritage data up through the Sea-Viewing Wide Field-of-View Sensor (SeaWiFS) ocean color mission stored in the Version 0 DAAC, Tropical Rainfall Measurement Mission (TRMM) data products archived in the Version 1 DAAC, and mission data from MODIS and future EOS instruments being archived in the large Earth Science Data and Information System (ESDIS) Core System (ECS) component of the DAAC.

James Acker to speak—James was invited to speak on April 26th by the College of Marine Science, University of South Florida-St. Petersburg, where he received his Ph.D. in the mid 1980s. He will give a seminar entitled “Expanding the View From Space: Using Ocean Color Data for Ocean Geochemistry.”

Jason Y. Li, new member of the Atmospheric Dynamics Data Support Team (ADDST) led by Jianchun Qin (a.k.a. jcq)—Jason graduated with a Bachelor’s degree in Applied Physics (with honors) from Curtin University of Technology, Perth, Australia, then went on to the University of Wisconsin-Madison where he completed his Master’s degree in Atmospheric Sciences. As a critical member of the ADDST, Jason is actively involved in providing science and user support services to the AIRS data set, developing high quality scientific analysis tools and visualization software for remote sensing data, and maintaining NCEP/NESDIS ancillary data links. Prior to joining the ADDST he was an experimental scientist at the CSIRO Division of Atmospheric Research in Aspendale, Victoria, Australia, then, since 1994, a program analyst in the Climate and Radiation Branch, here at NASA Goddard. He has worked with an array of spaceborne and airborne remote sensing instruments, including the Cloud Absorption Radiometer and MODIS Airborne Simulator and MODIS. Jason also supported many field deployments in Brazil, South Africa, Alaska, and many parts of the continental United States.

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